

Breast Cancer Awareness Luncheon
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Remarks By:
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When I first started thinking about what I would say today, I thought I would trot out the statistics about breast cancer.

-- I would tell you that 180,200 new cases of breast cancer will be diagnosed this year.

-- I would remind you that almost 44,000 women will die of breast cancer this year.

-- I'd give you the shocking news that a woman dies of breast cancer every 11 minutes.

I was going to open with these statistics because I thought they told the whole story. I thought reciting them would be the best way to galvanize you -- and us -- to work harder.

I was wrong. All of us who know the bravery of women battling breast cancer know better.

Yes, part of the breast cancer story is tragic. It can kill. It kills thousands every year.

But that's not the whole story. It's only part of it.

The rest of the story is a story of hope. It's a story of strength and grace and awesome courage.

Let me tell you about one woman's experience.

Her name is Janine.

She is one of many women who share their experiences every day on the Internet.

Why would a person do that? Why would a woman tell the world about the grim walk through icy terror and physical devastation -- the treatments, the nausea, the fear.

Janine tells the story because she desperately wants other women to know that they are not alone, that there is a network, there's strength, there's hope. They need only turn to caring people reaching out.

Forty-one-year-old Janine ate a low-fat diet and very

little red meat. She worked out four days a week. She wasn't worried about breast cancer. She had no family history of it.

She found a lump in her left breast and immediately called her doctor.

She had ultrasound. She had a surgical biopsy. The doctor said she was fine, no problem.

Three months later, she called the doctor again. The lump was still there. She went back in, and got some very different news this time. Janine had breast cancer.

What she felt most was anger. Fury. This could not be happening -- this could not happen to her.

She went through a mastectomy, with all its fear and challenge to her self-image. She went through chemotherapy.

She called on her friends and family. She called on her God. She called on her own inner strength.

Today, she's a three-year survivor of cancer.

At NASA, we are proud to fight on behalf of people like Janine.

I want to mention some of the technologies NASA is working on that will help beat the odds.

Breast cancer hangs like a sword over 51.3 percent of the population of America. But population is a cold word and statistics don't touch people's hearts.

Let me get personal. Let me tell you who is in that population -- my wife is in it, my two daughters are in it, and my new granddaughter is in it. Judy, Laura, Ariel and Jessica are not statistics to me, they are everything I hold dear.

I can't wait, and we can't wait passively for the technology to trickle into the health care arena. I want NASA to jump in and push technology into the hands of health care providers. And with our new partnership with Dr. Susan Blumenthal at the Department of Health and Human Services, it's going to happen a lot faster. We're connecting the techies to the doctors.

We identified six technologies so far, and there will be many more. I promise we will continue to search for them. I promise we will find them. I promise we will make them available as fast as humanly possible.

I want to stress that NASA does not, and cannot, do this alone.

We work closely with experts in the cancer business. We jointly sponsor with NIH teams of researchers, clinicians, and industry to work on technologies in the fight against breast cancer.

Let me touch very briefly on six technologies.

1.) Silicon chips in Hubble convert a star's light into digital images. Today, that lets doctors detect tiny spots in breast tissue. Because they can pinpoint the problem, they can use a needle to draw samples instead of a scalpel. This has cut the cost of biopsy from thousands of dollars to hundreds of dollars.

2.) Instruments used in space to study the atmosphere might soon be in your doctor's office. We're working to enable doctors to take higher-resolution pictures of the breast. This will be especially important for young women, whose tissue is denser and harder to see. Perhaps Janine could have gotten her diagnosis three months earlier.

3.) NASA developed technology to improve the quality of pictures from the Mars Pathfinder. This kind of breakthrough helps doctors make 3-D models of breasts to pinpoint disease using ultrasound. And hopefully not just pinpointing, but wiping it out with ultrasound instead of using x-rays, which harm healthy tissue.

4.) NASA's technology for long-distance surgery on astronauts in space is being adapted into a robot. The robot can use a smaller probe than human doctors. Cancer can be removed with less impact on healthy tissue.

5.) NASA Lewis in Ohio is working with hospitals to connect women in rural areas to medical experts across the country. I'm talking about tele mammography. This is the electronic transmission of digitized mammograms. We're connecting people in need to the best experts in the country at low cost.

6.) NASA's Johnson Space Center in Houston is leading a project called the bioreactor, which is used to grow human tissue in three dimensions outside the body.

Scientists can test for sensitivity to chemotherapy and hormonal therapy without adversely affecting the patient. We will also give physicians and scientists a better insight into how cancer cells grow and that may help them develop new treatment.

And today as we sit here, David Wolf is on the Mir Space Station working on a preprocessor to the bioreactor. The preprocessor is being modified so that in January when the bioreactor is taken up to the Mir with astronaut Thomas, we will grow a human breast cancer tumor. The tumor will have a fidelity never accomplished before, including the healthy blood vessels that pass through that tumor. Just think about

it. This is why we are working with the Russians on Mir.
This is why we're building a Space Station.

Before today, you might not have connected NASA with the fight against breast cancer.

You may not have known that NASA's on the front line in the battle for women's health.

And maybe you did not know about the men and women at NASA who are committed to fighting breast cancer.

Now you know what's in our hearts.

There's something I want you to think about the next time someone mentions the Mir...

..Or the next time someone wonders why we want to do research on the International Space Station.

...Or the next time somebody says exploring for its own sake isn't enough -- what about practical benefits?

Think about the courage of the women who are surviving breast cancer, and the courage of the women who didn't.

Think about the 180,200 people this year whose lives will change in one heart-stopping moment, when they hear the words, "breast cancer."

Think hard.

We at NASA are.

Thank you.